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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/527,141

03/09/2005

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EXAMINER

GANEY, STEVEN J

ART UNIT

PAPER NUMBER

3752

MAIL DATE

DELIVERY MODE

01/28/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/527,141	<b>Applicant(s)</b> BOWMAN ET AL.	
	<b>Examiner</b> STEVEN J. GANEY	<b>Art Unit</b> 3752	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 January 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 55-78 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 55-67 and 74-78 is/are allowed.
- 6) ☒ Claim(s) 68,69 and 71-73 is/are rejected.
- 7) ☒ Claim(s) 70 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Receipt is acknowledged of the amendment filed on January 7, 2009, which has been fully considered in this action.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 69 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 69, the preamble of the claim is inconsistent with the body of the claim. In claim 69 a swirl disk (subcombination) is recited in the preamble, however, recitation of "in combination with an orifice disk" is indefinite since the combination of these two subcombinations elements, the swirl disk and orifice disk are defining the spray nozzle, not just the swirl disk as recited in original claim 68 and claim 69.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 68 and 71-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tate et al '263 in view of Curran.

Tate et al '263 shows a swirl unit comprising a swirl disk 26 with a first aperture forming a swirl chamber 25 and second aperture 27 defining a flow inlet, see Figure 2; a filter, see col. 3, line 75 through col. 4, line 2; an orifice disk 16 having a first aperture 20; a retaining body 10 with an inlet and outlet aperture 13, see Figure 1; a plug 30 with at least one fluid conduit 36 and at least one exit aperture 39 and an annulus 35, except for the sheet material substrate defining within the range of about 0.003 inch to about 0.03 inches. Note that Tate et al '263 discloses in col. 1, lines 67-72, that the configuration and the depth of the swirl chamber may be varied.

Curran discloses a swirl unit comprising a swirl disk 7 with inlet conduits 8 with a thickness of .005 inches to .002 inches; an orifice disk 12; a retaining body 2; and a plug 3. Note that Curran in col. 2, lines 36-45, discloses that the cross-sectional area of the inlet conduits can be obtained by stamping of a swirl disk of different thickness of sheet metal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the swirl disk of Tate et al '263 to have a thickness within the claimed range, since Curran shows a swirl disk which falls within the thickness range and teaches that different cross-sectional areas of the inlet conduits can be obtained by stamping of a swirl disk of different thickness of sheet metal, therefore, and since Tate et al '263 discloses that the configuration and the depth of the swirl chamber may be varied.

As to the use of the term "etched", note that the claims are considered product-by-process claims.

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***Response to Arguments***

6. Applicant's arguments with respect to claims 68, 69 and 71-73 have been considered but are moot in view of the new ground(s) of rejection.

***Allowable Subject Matter***

7. Claims 55-67 and 74-78 are allowed.

8. Claim 70 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN J. GANEY whose telephone number is (571)272-4899. The examiner can normally be reached on 9:00-5:00; Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on 571-272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven J. Ganey/  
Primary Examiner  
Art Unit 3752

sjg